

a fine adjustment stage arranged to be freely moved within predetermined ranges in said scanning direction and in a direction perpendicular to said scanning direction with respect to said scanning stage for mounting said object of scanning thereon;

actuators arranged in said scanning direction and in the direction perpendicular to said scanning direction with respect to said scanning stage for driving said fine adjustment stage;

a cooling unit for cooling said actuators by circulating a predetermined circulating fluid;

a movable mirror fixed on said fine adjustment stage; and

an interferometer for irradiating a measurement light beam on said movable mirror to detect a displacement of said fine adjustment stage with respect to said scanning stage,

wherein said cooling unit circulates said cooling fluid from a portion near an optical path of the light beam from said interferometer toward a distant portion.

25. (New) A stage apparatus comprising:

a first stage arranged to be movable linearly in a first direction;

a second stage arranged to be movable in said first direction and in a second direction perpendicular to said first direction with respect to said first stage;

a first actuator for driving said second stage in said second direction with respect to said first stage; and

a second actuator for driving said second stage in said first direction with respect to said first stage by a larger thrust than the thrust of said first actuator.

26. (New) A stage apparatus comprising:  
a first stage arranged to be movable linearly in a  
first direction;

a second stage arranged to be movable in said first direction and in a second direction perpendicular to said first direction with respect to said first stage;

a first actuator for driving said second stage in said second direction with respect to said first stage; and

a second actuator for driving said second stage in said first direction with respect to said first stage by a thrust different from the thrust of said first actuator.

27. (New) A stage apparatus for scanning an object of scanning which includes at least one of a mask and a photosensitive substrate, said stage apparatus being provided to a scanning exposure apparatus which illuminates said mask on which a transfer pattern is formed and scans said mask in a predetermined scanning direction and synchronously scans said substrate in a direction corresponding to said scanning direction, thereby exposing said pattern on said mask onto said substrate, comprising:

a base;

a scanning stage arranged to be freely moved in said scanning direction on said base;